

DESCRIPTION AND RATING

The 12CT8 is a miniature triode-pentode designed for use in compact, 300-milliamperere, series-string television receivers. The pentode section is designed primarily for use as a video amplifier. The triode section is suitable for service as a sync amplifier, separator, or clipper, or as a sweep oscillator.

The 12CT8 has a controlled heater warm-up characteristic as required for use in television receivers that employ series-connected heaters. It also features high performance capabilities at the low d-c supply voltages normally available in these applications.

The 12CT8 is similar to the 6AU8, from which it differs primarily in heater ratings, basing arrangement, length of envelope, and maximum ratings.

GENERAL

ELECTRICAL

Cathode—Coated Unipotential

Heater Voltage, AC or DC..... 12.6 Volts

Heater Current..... 0.3 \pm 6% Amperes

Heater Warm-up Time*..... 11 Seconds

Direct Interelectrode Capacitances†

Pentode Section

Grid-Number 1 to Plate..... 0.044 μ f

Input..... 7.5 μ f

Output..... 2.4 μ f

Triode Section

Grid to Plate..... 2.2 μ f

Input..... 2.4 μ f

Output..... 0.19 μ f

Pentode Grid-Number 1 to Triode Plate, maximum..... 0.010 μ f

Triode Grid to Pentode Plate, maximum..... 0.016 μ f

Pentode Plate to Triode Plate, maximum..... 0.16 μ f

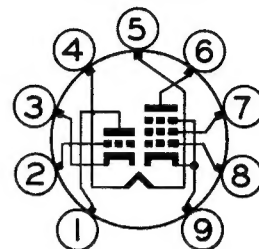
MECHANICAL

Mounting Position—Any

Envelope—T-6½, Glass

Base—E9-1, Small Button 9-Pin

BASING DIAGRAM



RETMA 9DA

TERMINAL CONNECTIONS

Pin 1—Triode Plate

Pin 2—Triode Grid

Pin 3—Triode Cathode

Pin 4—Heater

Pin 5—Heater

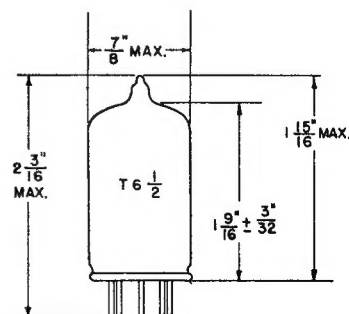
Pin 6—Pentode Plate

Pin 7—Pentode Grid Number 2 (Screen)

Pin 8—Pentode Grid Number 1

Pin 9—Pentode Cathode, Grid Number 3, and Internal Shield

PHYSICAL DIMENSIONS



RETMA 6-2

MAXIMUM RATINGS

DESIGN-MAXIMUM VALUES	Pentode Section	Triode Section
Plate Voltage	300	300 Volts
Screen-Supply Voltage	300 Volts
Screen Voltage—See Screen Rating Chart		
Positive DC Grid-Number 1 Voltage	0	0 Volts
Plate Dissipation	2.75	2.5 Watts
Screen Dissipation	0.9 Watts
Heater-Cathode Voltage		
Heater Positive with Respect to Cathode		
DC Component	100	100 Volts
Total DC and Peak	200	200 Volts
Heater Negative with Respect to Cathode		
Total DC and Peak	200	200 Volts
Grid-Number 1 Circuit Resistance		
With Fixed Bias	0.25	0.5 Megohms
With Cathode Bias	1.0	1.0 Megohms

Design-Maximum Ratings are the limiting values expressed with respect to bogie tubes at which satisfactory tube life can be expected to occur for the types of service for which the tube is rated. Therefore, the equipment designer must establish the circuit design so that initially and throughout equipment life no design-maximum value is exceeded with a bogie tube under the worst probable operating conditions with respect to supply-voltage variation, equipment component variation, equipment control adjustment, load variation, and environmental conditions.

CHARACTERISTICS AND TYPICAL OPERATION

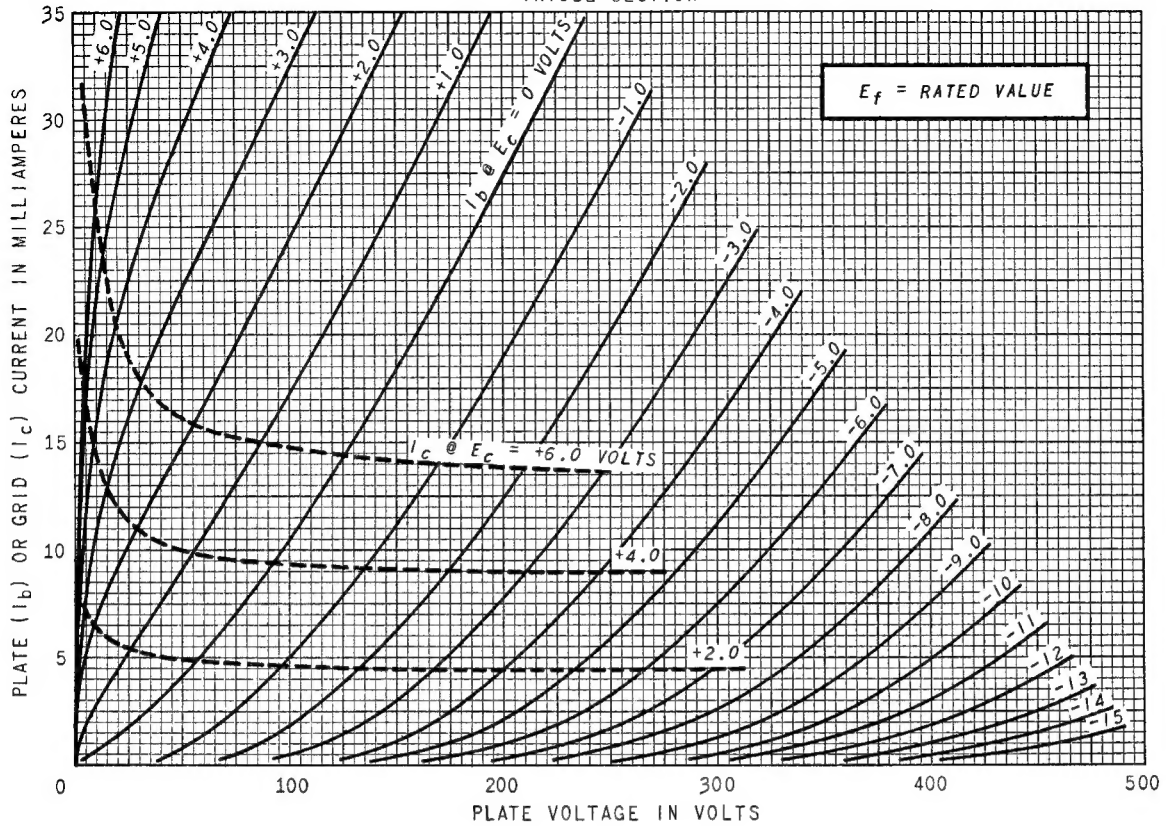
	Pentode Section	Triode Section
Plate Voltage	200	150 Volts
Screen Voltage	125 Volts
Cathode-Bias Resistor	82	150 Ohms
Amplification Factor	40
Plate Resistance, approximate	150000	8200 Ohms
Transconductance	7000	4900 Micromhos
Plate Current	15	9.0 Milliamperes
Screen Current	3.4 Milliamperes
Grid-Number 1 Voltage, approximate		
I _b = 100 Microamperes	—8	—6.5 Volts

* The time required for the voltage across the heater to reach 80 percent of its rated value after applying 4 times rated heater voltage to a circuit consisting of the tube heater in series with a resistance equal to 3 times the rated heater voltage divided by the rated heater current.

† Without external shield.

AVERAGE PLATE CHARACTERISTICS

TRIODE SECTION



12CT8

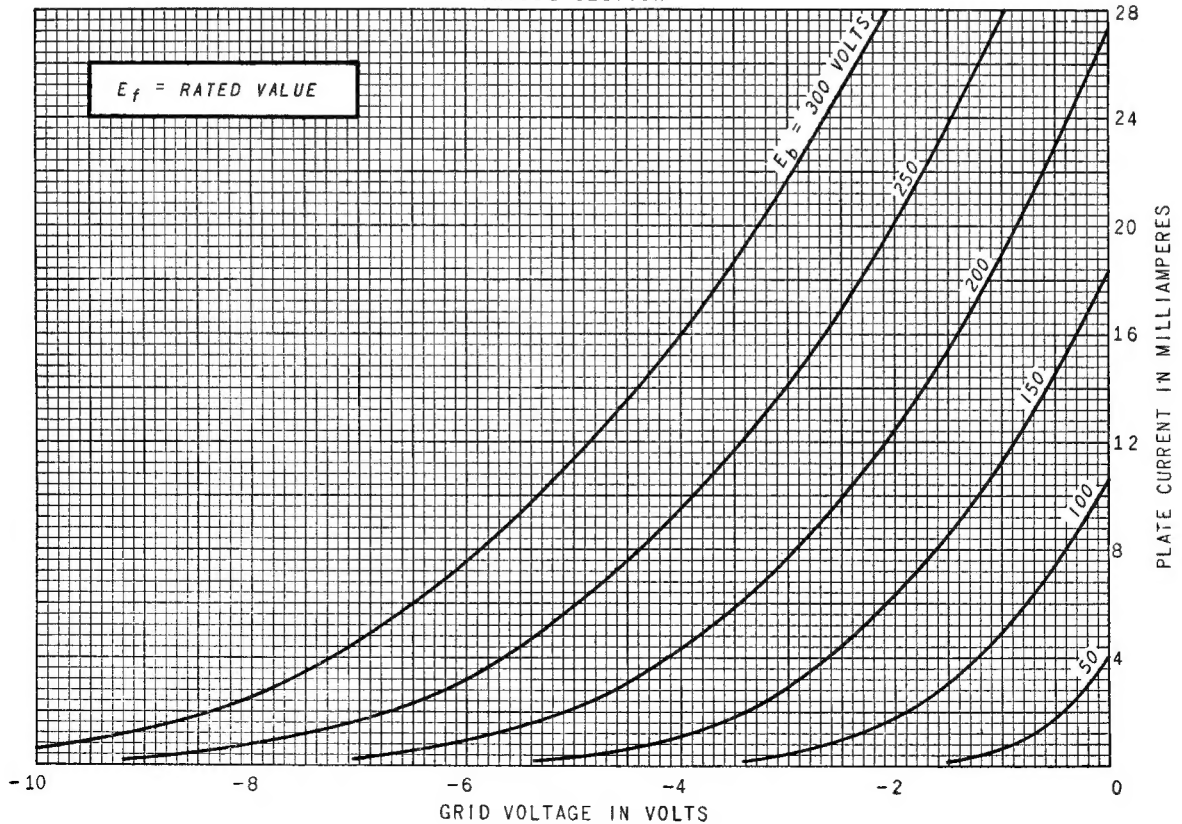
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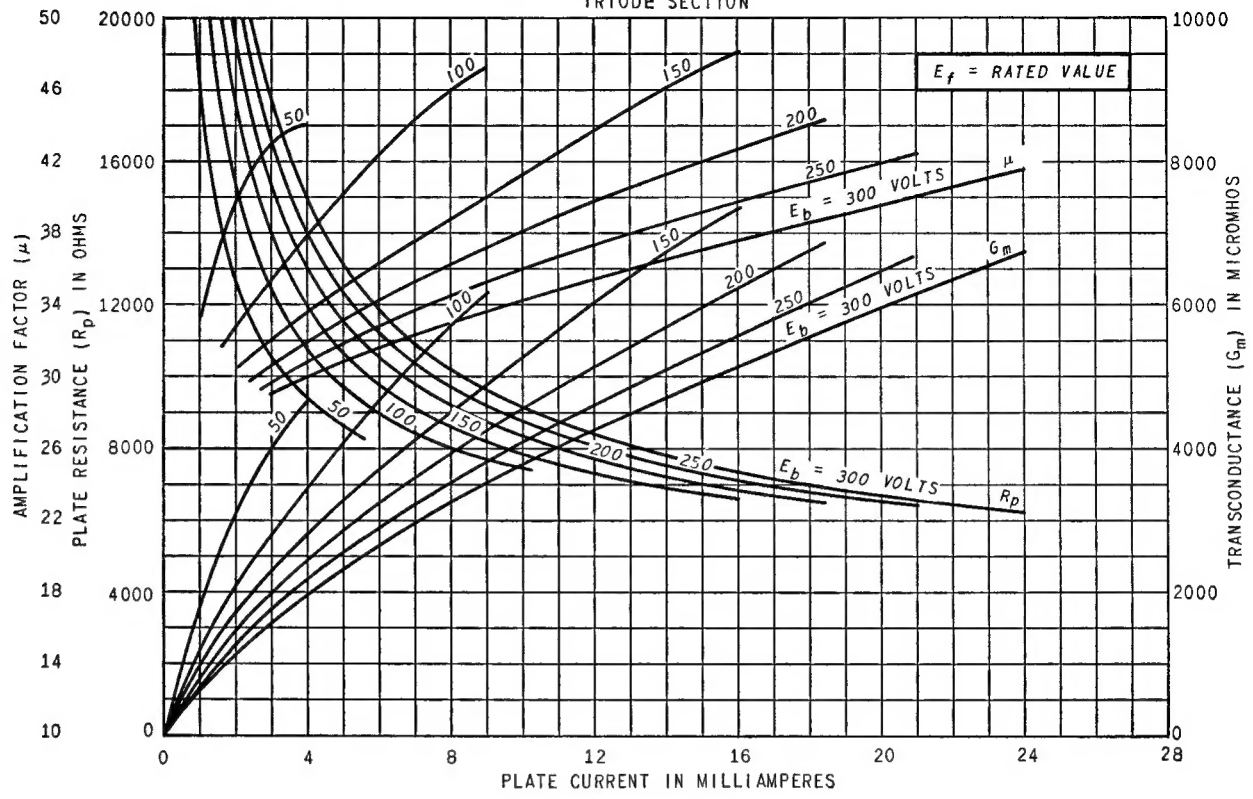
AVERAGE TRANSFER CHARACTERISTICS

TRIODE SECTION



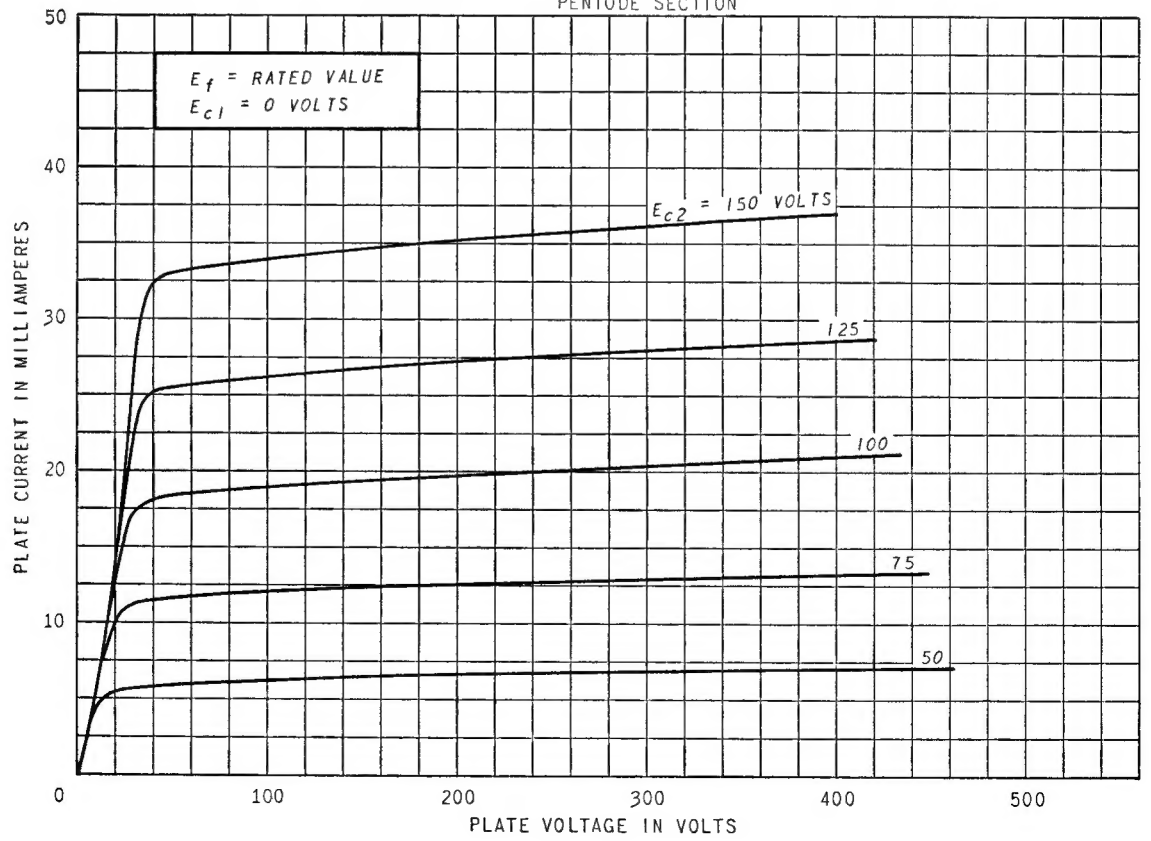
AVERAGE CHARACTERISTICS

TRIODE SECTION



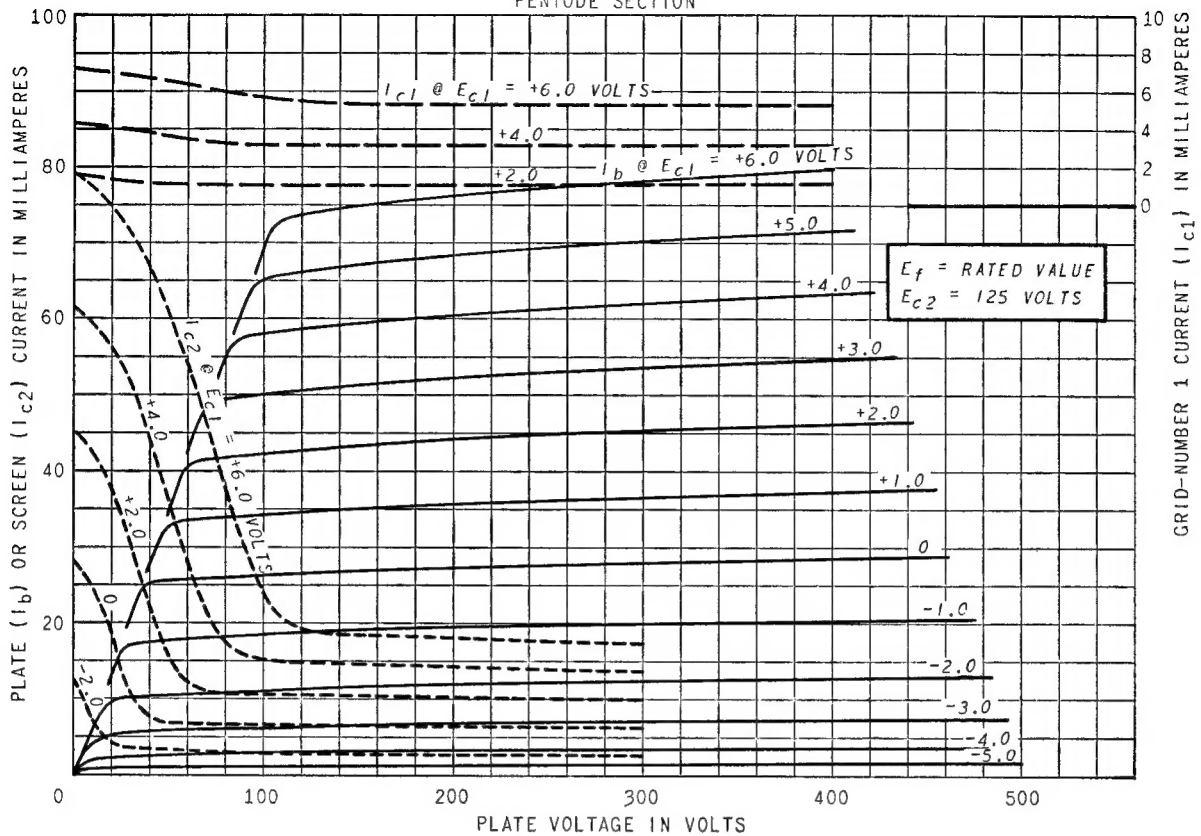
AVERAGE PLATE CHARACTERISTICS

PENTODE SECTION



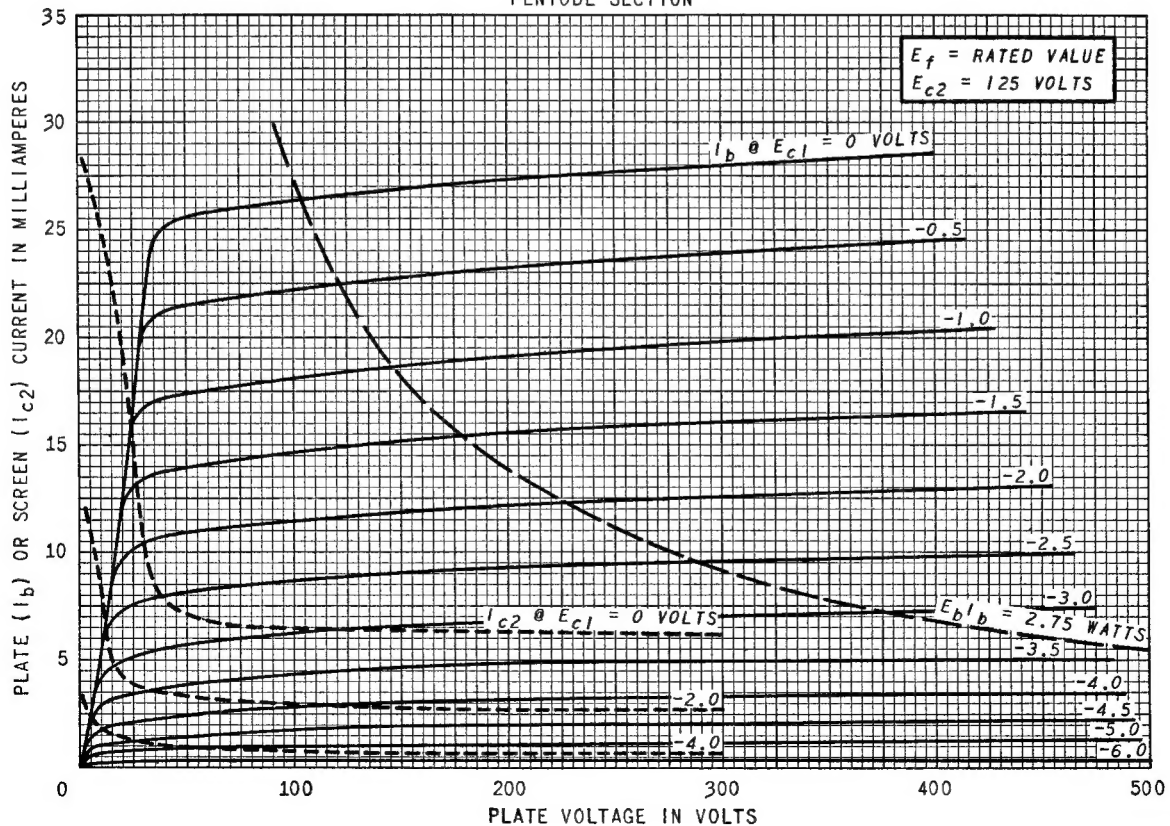
AVERAGE PLATE CHARACTERISTICS

PENTODE SECTION



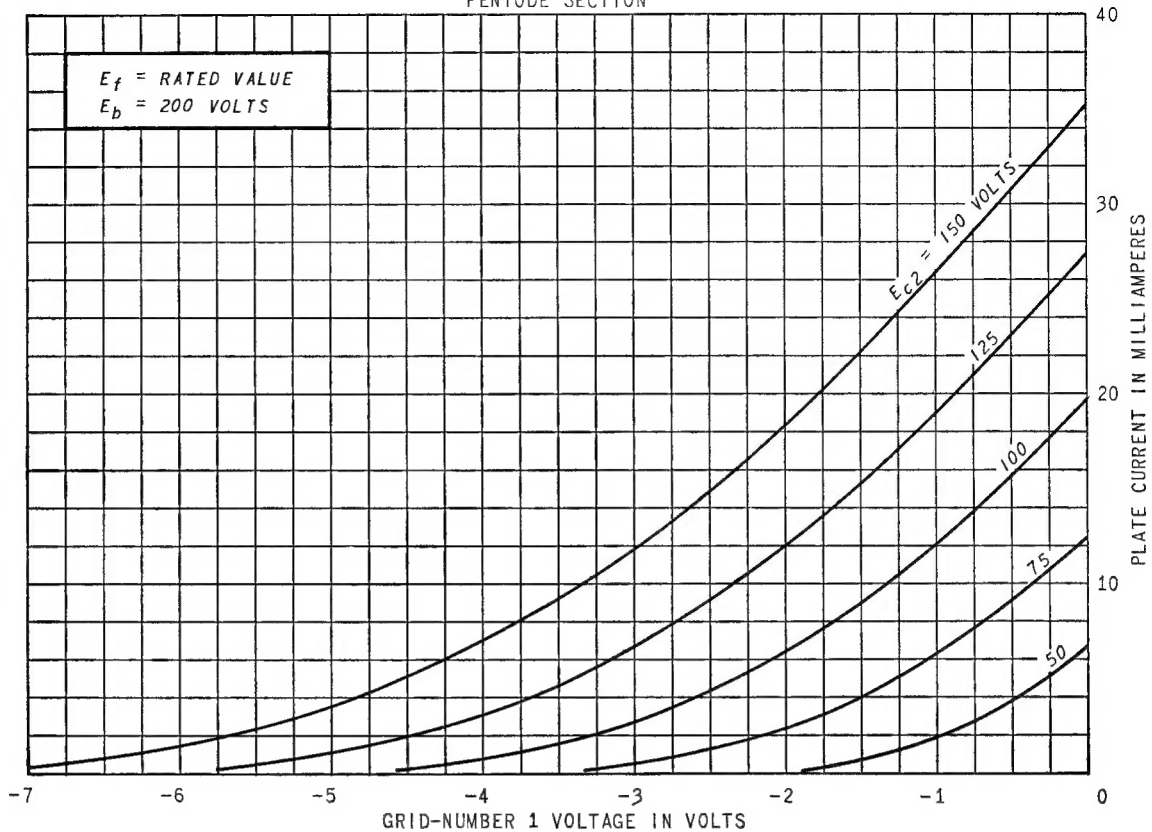
AVERAGE PLATE CHARACTERISTICS

PENTODE SECTION



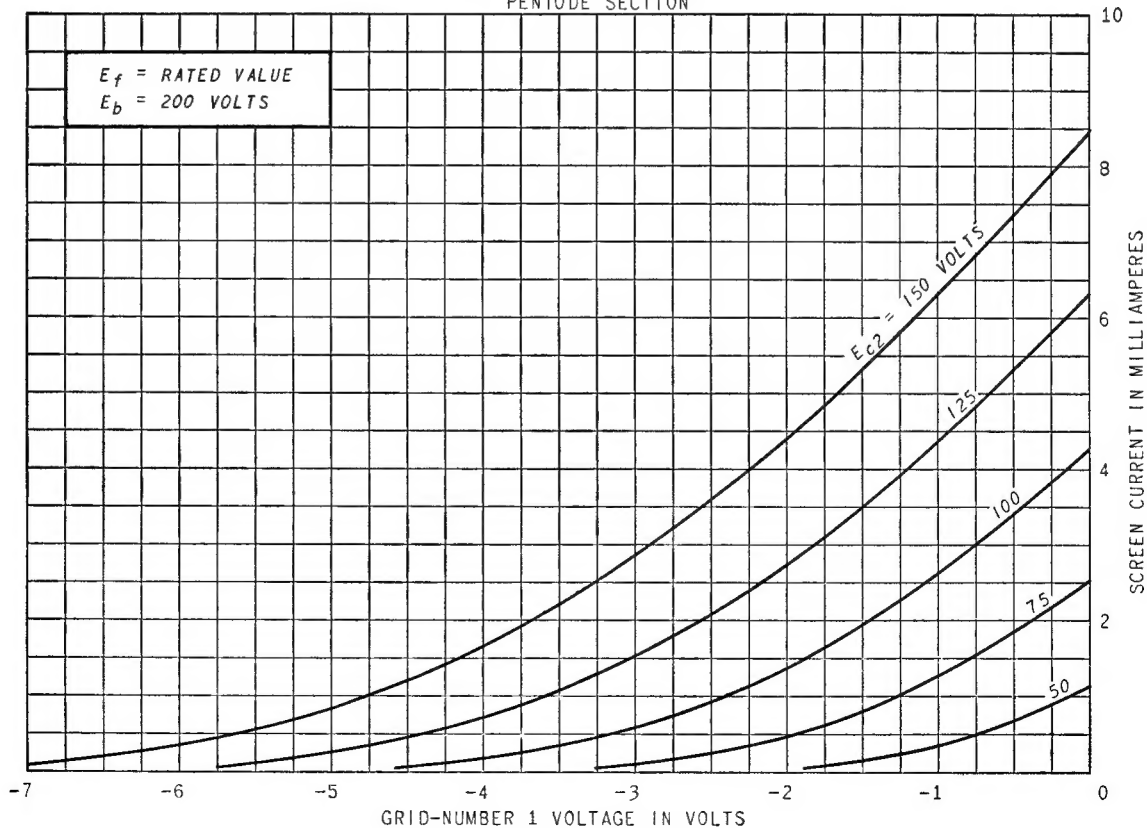
AVERAGE TRANSFER CHARACTERISTICS

PENTODE SECTION



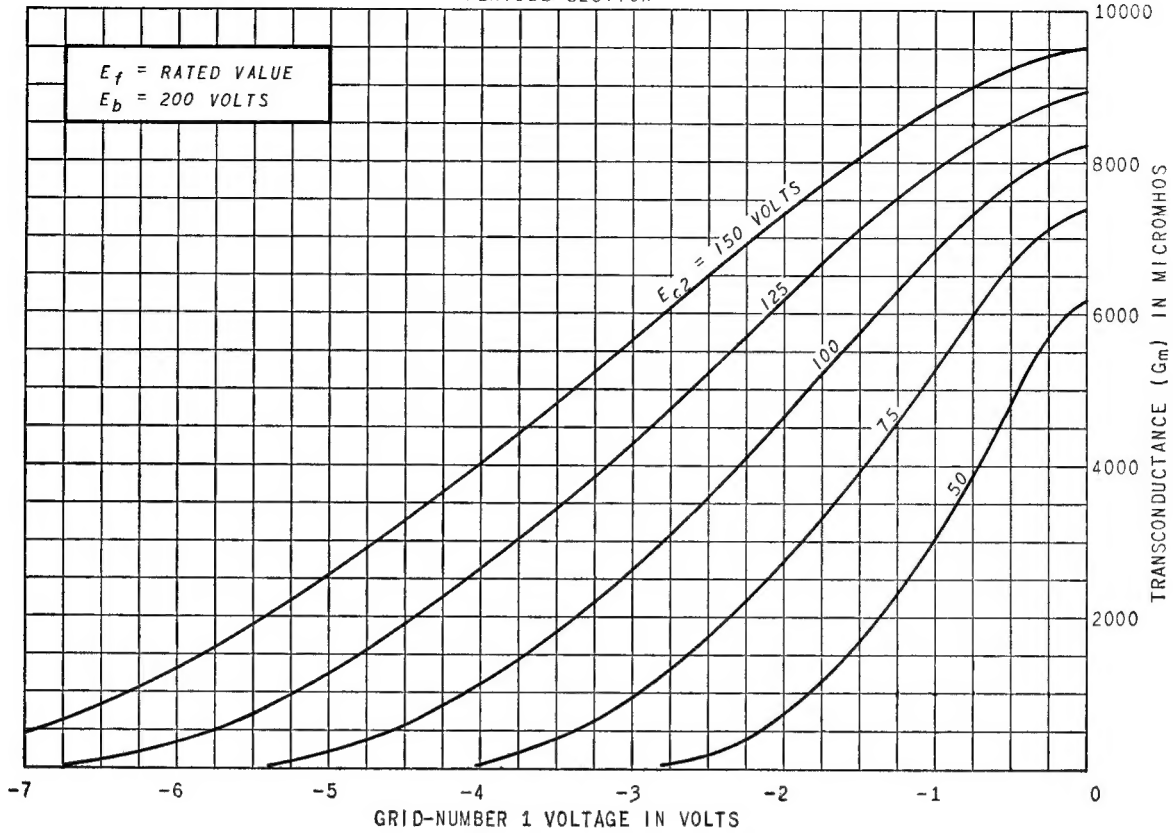
AVERAGE TRANSFER CHARACTERISTICS

PENTODE SECTION



AVERAGE TRANSFER CHARACTERISTICS

PENTODE SECTION



SCREEN RATING CHART

PENTODE SECTION

